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United States Department of Agriculture,

BUREAU OF PLANT INDUSTRY,

Seed and Plant Introduction and Distribution,

WASHINGTON, D. C.

THOUSAND-HEADED KALE (*Brassica oleracea* var.).

Thousand-headed kale is a succulent, nutritious forage plant, much grown in England and France, which has been found admirably adapted to the moist, mild climate of the northern Pacific coast region, and it is likely to be of much wider adaptation, especially where winters are not too severe. It is closely related to rape, but the plants are much taller and the leaves longer and broader. It does not head up like cabbage. The name thousand-headed refers to the numerous branches the plants have when given plenty of room.

This variety of kale is used chiefly for feeding green to dairy cows, for which purpose it is of high value. It would also probably be an excellent winter feed for hogs and poultry. It does best on well-manured, deep, rich loams and sandy soils.

Seeding.—Seed should be sown in drills on well-prepared and well-drained soil as soon after March 1 as the season will permit. This will furnish plants for transplanting in June or July. The land used for planting should be well manured, plowed two or three times between March 1 and June 1, and put in good condition by disking and harrowing. It should be plowed again about June 1 with a 12-inch plow and the young kale plants dropped $2\frac{1}{4}$ to 3 feet apart in every third furrow. Place the roots so that the next furrow will cover them sufficiently, being careful not to cover the tops. The land planted during the day should be rolled the same evening. Two or three cultivations are all that can usually be given, for the plants will soon touch between the rows if they do well. Any plants that fail to grow when plowed in may be replaced by hand transplanting. Some growers prefer to sow the seed in hills and thin to single plants. Others transplant kale the same as cabbage, instead of plowing it in. The time of transplanting must be determined by the size of the plants and the condition of the land. It may be delayed until July if the land is wet and subject to overflow; if well drained, the work may be done earlier than June 1.

Feeding.—Kale may be fed green from the field as needed, from October 1 to April 1. If the growth is forced in early spring, it may be fed much earlier than October 1. By using only the lower leaves it is possible to begin feeding quite early without stopping the growth of the plant.

To avoid tainting the milk, feed just after milking, 25 to 40 pounds a day, in two feeds. The kale may be fed fresh or allowed to wilt before feeding. It should not be cut more than four or five days before it is fed, nor should it be thrown in heaps, as it heats readily. Kale should not be fed while it is frozen. On the approach of freezing weather a supply sufficient to last several days should be placed in the barn.

Seed production.—Kale does not produce seed until the second year. The plants vary considerably, and thus afford opportunity for the selection of desirable types. These selections should be made during the first season. Those that begin spreading near the ground and that have many narrow leaves should be chosen. This type of plant yields better and is less injured by freezing than the one with the stem bare for some distance above ground. These plants should be removed from the field and transplanted in February to prevent cross pollination by undesirable kale or rape, cauliflower, or other related plants. It is believed that kale crosses with wild mustard and wild turnip; hence none of these plants should be allowed to grow with the kale intended for seed. If the seed crop is small, it may be cut and thrashed by hand; if large, it may be cut with a binder or self-rake reaper and thrashed either by hand or with a machine. It should be cut when the first seeds are turning brown.

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